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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,035	10/31/2003	Naoto Jikutani	242058US2CIP	1110
22850	7590	12/13/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MENEFE, JAMES A	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,035

Applicant(s)

JIKUTANI ET AL.

Examiner

James A. Menefee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-125 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-125 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

This application contains claims directed to the following patentably distinct species of the claimed invention. The examiner additionally lists the claim numbers believed to read on each species. The claims include a particular type of DBR distinct from the others:

I. DBR with a alternating first and second semiconductor layers, and a material layer having a specified thickness between 5 and 50 nm (claims 1-5, 18-23, 37, 40, 43, 46, 49, 52-62).

II. DBR with alternating first and second semiconductor layers, and a material layer having a specified thickness derived from an equation (need not be 5-50 nm) (claims 6-8, 24-27, 38, 41, 44, 47, 50).

III. DBR with alternating first and second semiconductor layers, and a material layer comprising two layers with changes in bandgap and composition (claims 9-17, 28-36, 39, 42, 45, 48, 51).

IV. DBR having alternating first and second semiconductor layers with an intermediate layer therebetween, intermediate layer having different thicknesses in different portions of the DBR (claims 63-86).

V. n-type DBR having alternating first and second semiconductor layers with an intermediate layer therebetween (claims 87-95, 108-111, 117, 120, 123).

VI. n-type DBR processed into a mesa structure (claims 96-101, 112-115, 118, 121, 124).

VII. n-type DBR having increased resistance with respect to other parts of the device (claims 102-107, 116, 119, 122, 125).

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Additionally, the claims contain patentably distinct devices using each of the above DBRs. Therefore upon electing a species of DBR, applicant must additionally choose a species from the following. Again the claims the examiner believes to read on each species are listed:

If applicant elects DBR I, the further species are:

- (a). A surface emitting laser array (1-5, 18-23, 37).
- (b). An optical interconnection system (1-5, 18-23, 40, 43).
- (c). An optical telecommunication system (1-5, 18-23, and one of claims 52-62 (each of these additionally being different species)).

Thus if I.(c). is selected, applicant must select one of claims 52-62 for examination.

If applicant elects DBR II, the further species are:

- (a). A surface emitting laser array (6-8, 24-27, 38).
- (b). An optical interconnection system (6-8, 24-27, 41, 44).
- (c). An optical telecommunication system (6-8, 24-27, 47, 50).

If applicant elects DBR III, the further species are:

- (a). A surface emitting laser array (9-17, 28-36, 39).
- (b). An optical interconnection system (9-17, 28-36, 42, 45).
- (c). An optical telecommunication system (9-17, 28-36, 48, 51).

If applicant elects DBR IV, the further species are:

- (a). A surface emitting laser array (63-78).

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- (b). A surface emitting laser module (63-73, 79-80).
- (c). An optical interconnection system (63-73, 81-83).
- (d). An optical telecommunication system (63-73, 84-86).

If applicant elects DBR V, the further species are:

- (a). A surface emitting laser array (87-95, 108-111).
- (b). A surface emitting laser module (87-95, 117).
- (c). An optical interconnection system (87-95, 120).
- (d). An optical telecommunication system (87-95, 123).

If applicant elects DBR VI, the further species are:

- (a). A surface emitting laser array (96-101, 112-115).
- (b). A surface emitting laser module (96-101, 118).
- (c). An optical interconnection system (96-101, 121).
- (d). An optical telecommunication system (96-101, 124).

If applicant elects DBR VII, the further species are:

- (a). A surface emitting laser array (102-107, 116).
- (b). A surface emitting laser module (102-107, 119).
- (c). An optical interconnection system (102-107, 122).
- (d). An optical telecommunication system (102-107, 125).

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Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic. Absent a traversal, the examiner will examine the claims listed above for the selected species. For example, if species VII.(a) is elected, claims 102-107 and 116 will be examined.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (571) 272-1944. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MinSun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James Menefee
November 30, 2005